

Little Science Stories for Laymen

Ozone, which is an allotropic form of oxygen, has long been recognized as an active purifying agent in the atmosphere owing to its powerful oxidizing qualities; but the question of its origin has been much disputed.

The investigations of Henriot, in France, have led him to the conclusion that ozone forms in the upper regions of the air, probably under the influence of the ultra-violet radiations from the sun, and that it is brought downward toward the surface of the earth both by descending air currents and by drops of rain.

After a shower of rain the quantity of ozone in the air is always found to have been increased.

Unique Coffin.

Perhaps the most singular coffin in which a human being ever was buried is the one of which the following story is told:

A workman engaged in casting metal for the manufacture of ordnance in the Woolwich arsenal, in England, lost his balance and fell into a cauldron containing twelve tons of molten steel. The metal was at white heat and the man was utterly consumed in less time than it takes to tell it.

The war office authorities held a conference and decided not to profane the dead by using the metal in the manufacture of ordnance, and the mass of metal was actually buried and a Church of England clergyman read the services for the dead over it.

Electric Light for Birds.

It has been found by the authorities of many zoological parks that one of the difficulties in maintaining their aviaries is the providing of a proper environment for birds brought from the tropics.

To warm the air to a tropical temperature is not enough. The birds demand light as well as heat. Many of them in their native homes are accustomed to feed at sunrise and again just before sunset, and their habits in this respect are seriously disturbed by the shortness of the winter days in northern climes.

It has been found beneficial to keep aviaries containing tropical birds brilliantly illuminated in the daytime with electric light from six o'clock in the morning to six in the evening, thus closely imitating the duration of daylight to which they are accustomed in their natural habitat. The result is that they feed in the normal way, live

longer and remain in better condition.

How Perfume Is Weighed.

It was the Italian physician Salvioni who devised a microbalance of such extreme delicacy that it clearly demonstrated the loss of weight of musk by volatilization. Thus the invisible perfume floating off in the air is indirectly weighed.

The essential part of the apparatus is a very thin thread of glass, fixed at one end and extended horizontally. The microscopic objects to be weighed are placed upon the glass thread near its free end, and the amount of flexure produced is observed with a microscope magnifying one hundred diameters.

A note weighing one-thousandth of a milligramme is said perceptibly to bend the thread.

The Pressure of Light.

The idea that the waves of light produce a mechanical push or pressure is not new, having been advanced years ago by Clerk Maxwell, who could offer only a theoretical proof.

Later Lebedew, of Moscow, made an experimental demonstration of the pressure of light. He employed a radiometer resembling the familiar Crookes radiometers with their revolving vanes, but used a larger and more completely exhausted bulb, from which the heating effect that is the principal agent in moving the Crookes vanes was excluded.

When the light falls upon the vanes they are driven before it, and the intensity of the pressure thus revealed comes within ten per cent of that calculated by Maxwell. The effect is independent of the color of the light and directly proportional to its energy.

Diamond Cleaving.

The art of the lapidary is one of the most delicate employments of mechanical force known. The practical diamond cutter learns many facts about precious stones which are sealed books even to mineralogists.

For instance, it is the lapidaries who have found out that diamonds coming from different districts vary remarkably in their degrees of hardness. It appears that the hardest diamonds known come from New South Wales.

An unfamiliar fact is that diamonds are made to assume approximately the required shape by slitting and cleaving and by "bruting," which is the rubbing of one diamond against another, before they are submitted to the polishing wheel.

In cleaving the diamond is cemented on the end of a wooden stick, and a steel blade is driven with a smart blow

in the direction of the natural plane of cleavage. Diamonds that have been cut by the lapidary's wheel lack some of the brilliance possessed by those that have simply been cleaved.

METHUSELAH SLEPT IN OPEN.

The New Hampshire Branch of the American Red Cross has published an interesting wall card, containing in large type a brief quotation from Benjamin Franklin's Art of Securing Pleasant Dreams, written in 1798, which, says the Survey, forms a telling endorsement of the modern open air crusade.

"Another means of preserving health to be attended to is the having a constant supply of fresh air in your bed-chamber. It has been a great mistake, the sleeping in rooms exactly closed and the beds surrounded by curtains. No outward air that may come to you is so unwholesome as the unchanged air, often breathed, of a close chamber. As boiling water does not grow hotter by long boiling if the particles that receive greater heat can escape, so living bodies do not putrefy, if the particles, so fast as they become putrid, can be thrown off.

"Nature expels them by the pores of the skin and the lungs, and in a free open air they are carried off, but in a close room we receive them again and again, though they become more and more corrupt. A number of persons crowded into a small room thus spoil the air in a few minutes, and even render it mortal as the Black Hole at Calcutta.

"A single person is said to spoil only a gallon of air per minute, and therefore requires a longer time to spoil a chamberful; but it is done, however, in proportion, and many putrid disorders hence have their origin.

"It is recorded of Methuselah, who, being the longest liver, may be supposed to have preserved his health, that he slept always in the open air; for when he had lived five hundred years an angel said to him, 'Arise, Methuselah, and build thee an house, for thou shalt live yet five hundred years longer.' And Methuselah answered, said, 'If I am to live but five hundred years longer, it is not worth while to build me an house; I will sleep in the air, as I have been used to do.'

Barker—Who's the fat old girl on the sofa? Host—Why, that's your wife, old man. Don't you recognize her? Barker—No. She does her bridge playing during the day, and I do mine at night.—Life.

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Many Cadillac Sales

are made to users who have been accustomed to buying much higher priced cars.

You will find, no doubt, that this has repeatedly occurred in the sphere of your own observation. And, in the same connection, other interesting phenomena have manifested themselves which bespeak universal satisfaction.

A Seeming Contradiction

What could be more significant, for instance, than the seeming contradiction of these two facts: First, that Cadillac owners almost never change. Second, that a majority of each year's buyers have never owned a Cadillac before.

This is literally true.

If you'll stop and think, can you recall a single Cadillac owner who transferred his allegiance to some other car?

And yet, we know, as we have said, that most of this year's Cadillac buyers have never owned a Cadillac before.

The Explanation

What is the explanation?

The very pleasing one that the Cadillac buyer gets more than a season's use out of his car—that most of last year's Cadillac buyers are driving the same car this year.

Speaking broadly, Cadillac cars do not deteriorate. If they are sold at the end of a season, they are sold for a high price. If they are exchanged, the exchange is usually generous.

Some Everyday Records of the



NEW YORK—75 Cadillac "Thirty" users drove their "Thirty" cars an aggregate of 398,884 miles at a total expense for mechanical repairs of \$53.21, averaging 71 cents per car for the season.

DAYTON—50 Cadillac owners drove their cars an aggregate of 168,580 miles at a total repair cost of only \$5.71 or an average of but 12 cents per car for the season.

INDIANAPOLIS—66 Cadillac users drove their cars an aggregate of 252,599 miles. Total repair cost, \$71.30, averaging \$1.08 per car.

NET TOTAL—191 cars—820,063 miles—cost, \$130.22. Average cost of 69 cents each, or less than 16 cents for each thousand miles.

Last year's Cadillacs are in actual demand this year, in addition to the demand for the 1911 Cadillac. This year's sales will eat up each day's production as fast as completed and shipped.

Gather all these facts together and they will spell their own explanation. And that explanation is:

Standardization

The Cadillac does not deteriorate because of the high state of standardization which exists in each part and in the union of all the parts. That is why so many Cadillac owners use their car a second season and a third and a fourth and continuously. That is also why so many who have owned cars of a higher price buy the Cadillac—a case of equal efficiency and greater economy. That, too, is why so large a proportion of new buyers choose the Cadillac. That is why the Cadillac owner says:—"If I had it to do over again, I would buy a Cadillac."

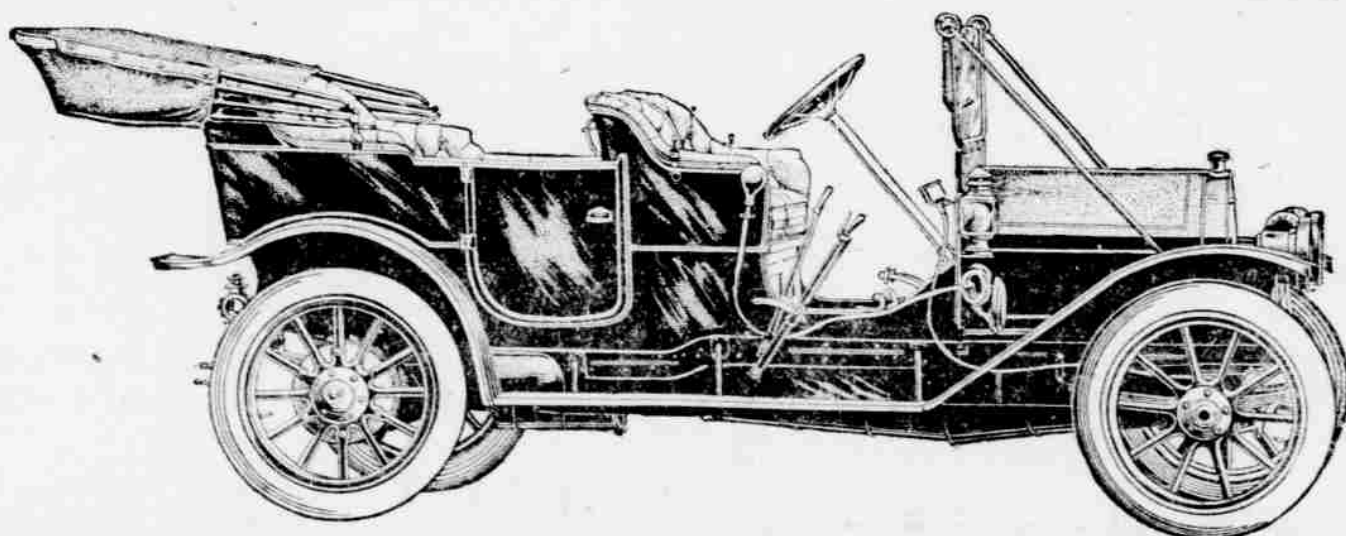
Standardization.—Perfect alignment of all the parts. Consequent removal of friction. The economy that results therefrom. That is the entire story of the success of last year's Cadillac, the Cadillacs of the years before, and the magnificent Cadillac of 1911.

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F. O. B. Detroit

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Prices include the following equipment—Bosch magneto and Delco ignition systems. One pair gas lamps and generator. One pair side oil lamps and tail lamp. One horn and set of tools. Pump and repair for tires. 60-mile season and trip Standard speedometer, robe rail, full foot rail in tonneau and half foot rail in front. Tire holders.



Cadillac Motor Car Company,

Detroit, Michigan

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